



Innovator In Spectroscopy Equipment

RTLC2118



RADIOACTIVITY TLC SCANNER MODEL RTALC2118

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CATALOG



MEDICAL



FREE DOWNLOAD

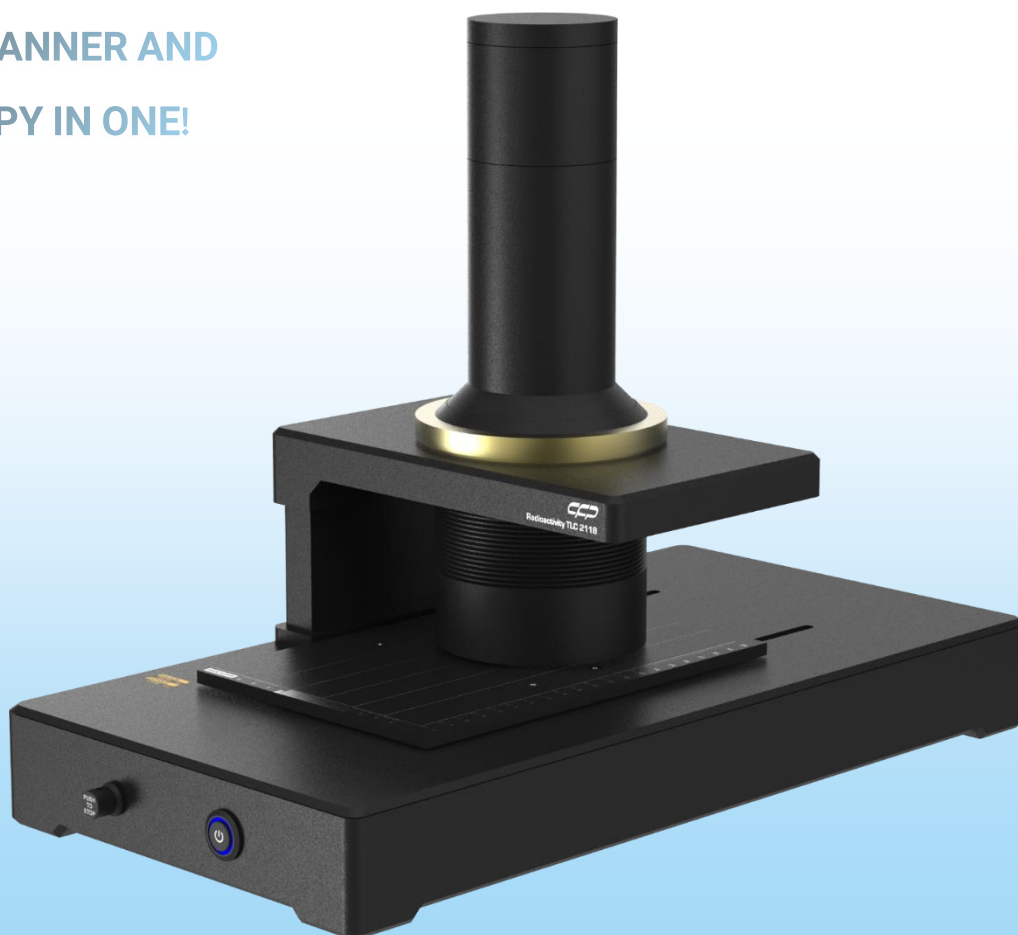
RADIOACTIVITY TLC SCANNER

MODEL RTL2118

Features

- Extremely high counting rate
- One trace scan 25mm x 200mm
- Fast, automated and reliable scans
- High sensitivity for all radioisotopes
- Optional beta probe for PET applications
- Variable scan speeds from 0.1 - 60 (mm/sec)
- Very high counting rate and dead time correction
- Spectroscopic analysis of radiopharmaceutical purity
- Supports all data extraction and reanalysis of stored data
- Full detector and data acquisition control via application software
- Performs thin-layer Chromatography (TLC) using a high-resolution NaI detector
- Daily quality control of radiopharmaceuticals used in nuclear medicine procedures
- Durable and versatile
- Splash resistant design
- Wide temperature range
- Ready for field operation
- Easy system setup and maintenance
- Robust and suitable for use in challenging conditions
- Easy to use system with maximum flexibility and automatic positioning system
- Integrated digital MCA with 4096 channel resolution and automatic decay correction and peak integration

RADIO TLC SCANNER AND SPECTROSCOPY IN ONE!



Description

Today radiochemical purity control is absolutely essential to ensure the accuracy of the radiopharmaceutical-based medical analysis. RTL2118 evaluates the radiochemical purity of specific radiopharmaceuticals used in nuclear medicine procedures. The RTL2118 is well suited to the busy nuclear medicine department with many procedures to perform.

RTL2118 comprises a NaI(Tl) detector in the standard package used in SPECT applications and comes with an optional beta detector that makes it suitable for PET applications.

The standard software provides a graphical user interface for TLC scan, gamma-ray spectroscopy, detector control, data acquisition, quality assurance (QA) and database management. The provided factory programmed protocols may be supplemented by user defined protocols. The protocols provide automatic control of the detector scan, the acquisition as well as graphical display and analysis. QA is assured by the quality control procedure and trending analysis of the QA data as a function of time. The database option supports the extraction and re-analysis of all stored data.

Various procedures needed for radio chromatography are implemented in the software of RTL2118. The chromatography procedure starts with definition of "Drop Point" and "Front End" where the user can define the starting and end of chromatography. User can also define the "Time" for the whole test and the "Repeat" number of test. Together with these information, the user provides various information that will be printed in the final report and will be used to identify the person who perform the test and its exact date and time. After this initialization setting, the chromatography test will be started and in the "Time" parameter defined by the user, the test will end. By finishing the scan, various features for the device will be activated. The user can define a specific energy range and the device will immediately visualize the chromatogram for the corresponding range. On the other hand, the user can also define an interval along the test length and software will immediately generate the spectrum corresponding to that interval. Various smoothing operations for both chromatogram and spectrum are applicable in the software.

For chromatographic analysis, the user can easily define "Radiopharmaceutical", "impurity" and "Background" regions and then software will perform the analysis and show the result in the table placed on the upper right corner of the software. The report generated by the user present a summary result of the test where analysis result table, whole spectrum and chromatogram are displayed. Also the color of final report can also be customized based on the user preferences.

Altogether RTL2118 is a total solution for radio chromatography tests which provide the user with various analysis setting parameters, data visualization procedures and reports.

Specifications

Input(s)

Power

48V (1.25A) AC to DC adaptor

LEMO PC interface

DC +5V LEMO 5 pin (200mA) for PC communication

Output(s)

No output signal

Control(s)

knob

This knob provides the user with manual control over the device slider.

Power Push button

Push to turn device ON and hold for 3 seconds to turn device OFF (long press)

While device ON push key to change mode (short press)

LEMO port

Setting configuration via LEMO 5 pin (A), USB (B) cable (set and read all data)

Indicator(s)

No indicator

Performance

Speed

0.1 –60mm/sec

Travel length

200mm

Strip size

30mm x 200mm

Collimators

Type1: 0 - 60keV, Width: 2mm

Type2: 60 - 300keV, Width: 3mm

Type3: 300 - 1500keV, Width: 3mm

Detector

NaI(Tl)

40mm x 40mm

PVT(optional)

0.25mm

PMT

14-pin 10-stage PMTs

Data Acquisition and Analysis

Processor

FPGA technology with Arm9, 32 bit 200MHz

OS

Built in Windows 7 or higher versions

Software
RTL2118 (SOFTWARE)
Measurement/Spectrum
High Voltage
0 - 1500V (DAC 12bit) 0.2mA
Energy channel (selective by admin)
From 0 to 1024keV
From 0 to 2048keV
From 0 to 3072keV
From 0 to 4096keV
Energy calibration
Non-linear empirical function or linear Calibration (polynomial fit)
ROI selection
Radiopharmaceuticals (arbitrary number of ROI)
Impurity (arbitrary number of ROI)
Background (one ROI)
ADC
Channels
12bit in 4096CH @120Mhz FRQ
Conversion time
200nsec with 8.3nsec time interval
Digital Signal Processing
12-bit and 120MHz ADC
Charge sensitive preamplifier gain:10 – 150mV/pC (selectable)
Amplifier coarse gain: (x1 to 150x) in 15 step
Amplifier fine gain: (0 - 2x) in 65536 step
Integration time filter for the energy calculation with software adjustable rise time in the range 0 to 0.546ms @80Mhz in 0-65536 step
Trigger threshold software adjustment (0 to 100% scale) in 1024 step
Software fine tuning of the Pole-Zero cancellation
Software gain stabilization
Pile-up rejection and live time correction
Baseline restorer with programmable averaging

Application

- Nuclear medicine
- Routine quality control of radiopharmaceuticals containing ^{68}Ga , ^{177}Lu , ^{90}Y , ^{18}F , $^{99\text{m}}\text{Tc}$, ^{123}I and other
- Radiochemical purity measurements
- Online inspection
- PET and SPECT quality control
- Quantitative and qualitative analysis of radioactive compounds
- Development and completion of the chromatographic process
- Radio scanning and documentation
- Pharmaceutical metabolite analysis
- Radiotracer toxicology studies
- TLC of radiopharmaceuticals labeled with gamma, high energy beta and positron emitters for R&D



Electrical, Mechanical and Environmental

Unit:RTLC2818	
Electrical	
Power required	Standard version +48V (1.25A) AC to DC adaptor
Physical	
Dimensions (L × W × H)	450 x 230 x 350 cm (L x W x H)
Weight	12.780kg
Mechanical	 Unit: mm
Storage temperature	0°C to 40°C
Operating temperature	10°C to 45°C
Relative humidity	10 to 80%

Software and user interface

PC software

RTL2118 (SOFTWARE): The system includes RTL2118 software for instrument control and data analysis. Quantitation of peaks is automatically performed and a report showing the method used, chromatogram and different radioactive information is generated. This software provides an easy-to-use interface for RTL2118 operation and radio-chromatographic analysis, including instrument control, method definition and storage, data acquisition, quantitative analysis and reporting functions.

Figure 1: Experimental setup window where the user can set various test parameters

Figure 2: Data acquisition window displayed when radio chromatography is being performed.

Figure 3: Typical software report where the user can customize the color (color, gray or monochromic)

Input /Output (using RTL2118 software)

USB

Data Output formats

CSV, TXT, XLS, PDF

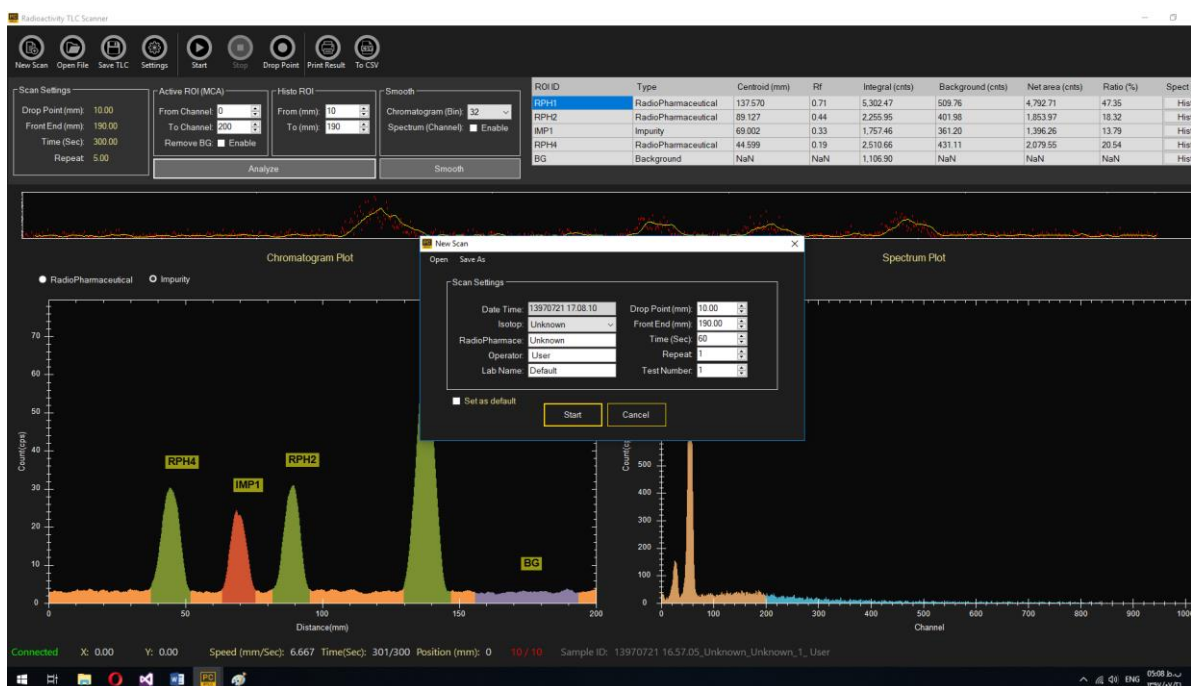


Figure 1: Experiment setup window



Figure 2: Data acquisition window

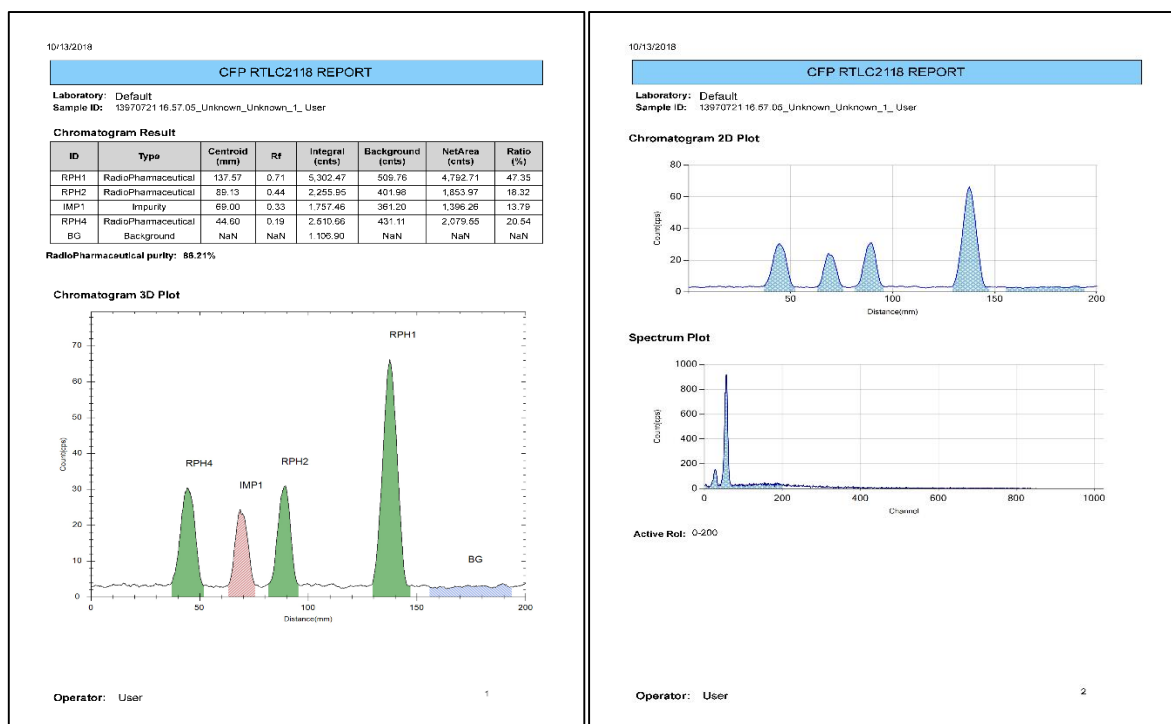


Figure 3: Typical software report

Ordering info

RTLC2118 standard package includes

Part #	Image	Description
RTLC2118 main		Main body of device (detection system, linear stage, integrated display)
ACCE2118001		User guide CD (1 Pack)
ACCE2118003*		Guaranty (one year)
ACCE2118011		5pin LEMO to 5pin LEMO connector for main to detector connection
ACCE2118012		LEMO cable to USB for PC connection
ACCE2118013		DC Power adaptor 48V, 1.25A

* We fully support our products. We guarantee your satisfaction in the quality of our instruments by providing a complete one-year warranty covering any defect of workmanship, material, and/or design. If our products do not perform, we will provide complete repair and/or replacement. For guaranty conditions, please refer to device manual (RTLC2118 - Manual).

Optional accessories and services

Part #	Image	Description
ACCE2118004		Installation
ACCE2118005		Training
ACCE2118006**		Re-calibration (interval) services. 1year factory maintenance suggested, not required
ACCE2118007		Hard case with foam insert
ACCE2118014		Beta probe (PVT, 0.25mm)

** = The proper maintenance & calibration of your instruments is critical to ensure proper performance & accuracy. for Re-calibration (interval) services, please call with CFP company (021- 46045383).



Innovator in Spectroscopy Equipment



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